

10/662,297
DOCKET NO. K06-156876M/TBS

2

AMENDMENTS TO THE CLAIMS:

Claim 1. (Currently amended) A damper valve comprising:

a hollow casing including a first port connected to a hydraulic pump side and a second port connected to a hydraulic actuator side;

a valve sleeve which divides the casing into a first chamber communicating with the first port and a second chamber communicating with the second port and includes a plurality of communicating passages communicating the first chamber with the second chamber;

a spool relatively movable with respect to the valve sleeve in an axial direction provided at the first chamber;

a spring for urging the spool toward the second chamber;

a supply port for supplying hydraulic oil, supplied to the first chamber through the first port, to the second chamber through the spool and the valve sleeve;

a one-way valve provided in the supply port for allowing the hydraulic oil to flow from the first port to the second port and inhibiting the hydraulic oil from flowing from the second port to the first port;

a reflux passage which leads the hydraulic oil from the second chamber to the first ~~damper chamber~~ through the plurality of communicating passages; and

a valve member defining a gap between an outer circumference of the valve member and said valve sleeve, said valve member also for covering openings of the communicating passages which face the first chamber, wherein the valve member is elastically deformed by a low flow rate of the hydraulic oil flowing from the second chamber to the first chamber and when a flow rate of the hydraulic oil flowing from the second chamber to the first chamber exceeds a predetermined value, the valve member is moved with the spool against urging

10/662,297
DOCKET NO. K06-156876M/TBS

3

force of the spring to widely open the openings of the communicating passages.

Claim 2. (Previously presented) The damper valve according to claim 1, wherein the valve member comprises an annular member surrounding the spool, and an inner circumference of the annular member is held between the valve sleeve and the spool.

Claim 3. (Previously presented) The damper valve according to claim 2, wherein said gap is also formed between an outer circumference portion of the valve member and the openings of the communicating passages.

Claim 4. (Original) The damper valve according to claim 3, wherein an annular projection to which the valve member is abutted is formed at an end surface of the valve sleeve to form the gap.

Claim 5. (Original) The damper valve according to claim 3, further comprising a shim interposed between the valve member and an end surface of the valve sleeve to form the gap.

Claim 6. (Original) The damper valve according to claim 3, wherein the valve member includes a step portion to form the gap.

Claim 7. (Currently amended) A damper valve comprising:
a hollow casing including a first port connected to a hydraulic pump side and a second port connected to a hydraulic actuator side;

10/662,297
DOCKET NO. K06-156876M/TBS

4

a valve sleeve which divides the casing into a first chamber communicating with the first port and a second chamber communicating with the second port and includes a plurality of communicating passages communicating the first chamber with the second chamber;

a spool relatively movable with respect to the valve sleeve in an axial direction provided at the first chamber;

a spring for urging the spool toward the second chamber;

a supply port for supplying hydraulic oil, supplied to the first chamber through the first port, to the second chamber through the spool and the valve sleeve;

a one-way valve provided in the supply port for allowing the hydraulic oil to flow from the first port to the second port and inhibiting the hydraulic oil from flowing from the second port to the first port;

a reflux passage which leads the hydraulic oil from the second chamber to the first damper chamber through the plurality of communicating passages; and

a valve member for covering openings of the communicating passages which face the first chamber, wherein the valve member is elastically deformed by a low flow rate of the hydraulic oil flowing from the second chamber to the first chamber and when a flow rate of the hydraulic oil flowing from the second chamber to the first chamber exceeds a predetermined value, the valve member is moved with the spool against urging force of the spring to widely open the openings of the communicating passages,

wherein the valve member comprises an annular member surrounding the spool, and an inner circumference of the annular member is held between the valve sleeve and the spool, and

wherein an end surface of the valve sleeve which faces the valve member is formed

10/662,297
DOCKET NO. K06-156876M/TBS

5

with an annular groove communicating with the openings of the communicating passages.

Claim 8. (Original) The damper valve according to claim 7, wherein a gap is formed between an outer circumference portion of the valve member and a bottom surface of the annular groove.

Claim 9. (Original) The damper valve according to claim 7, wherein an outer circumference portion of the valve member contacts with the valve sleeve to close the openings of the communicating passages.

Claim 10. (Original) The damper valve according to claim 1, wherein the damper valve is provided in a predetermined hydraulic circuit disposed between an output port of the hydraulic control valve and the hydraulic actuator.

Claim 11. (Currently amended) A damper valve, comprising:

a casing including a first port, a second port, and a valve sleeve dividing the casing into a first chamber communicating with the first port and a second chamber communicating with the second port and including a plurality of passages communicating with the first chamber and the second chamber;

a spool in the first chamber and axially moveable with respect to the valve sleeve;
a spring biasing the spool towards said second chamber;
a one-way valve allowing flow from the first port to the second port and inhibiting flow from the second port to the first port; and

10/662,297
DOCKET NO. K06-156876M/TBS

6

a valve defining a gap between said casing and an outer circumference of said valve
when a pressure differential across said valve is zero, the gap being defined by the casing, the
valve sleeve, and the valve.

wherein oil from the second port can flow to the first port through the second
chamber, the gap, and the first chamber in this order.

Claim 12. (Previously presented) The valve of claim 11, wherein an inner circumference of said valve abuts an annular projection of said valve sleeve.

Claim 13. (Previously presented) The valve of claim 11, wherein said valve comprises a step portion.

Claim 14. (Currently amended) The valve of claim 11, wherein said casing further comprises an annular projection on an inner circumference of said casing and wherein said valve defines said a gap between said outer circumference of said valve and said annular
projection.

Claim 15. (Previously presented) The valve of claim 11, wherein said valve surrounds said spool.

Claim 16. (Previously presented) The valve of claim 11, further comprising a shim between said valve and said casing.

10/662,297
DOCKET NO. K06-156876M/TBS

7

Claim 17. (Currently amended) A damper valve, comprising:

a casing including a first port, a second port, and a valve sleeve dividing the casing into a first chamber communicating with the first port and a second chamber communicating with the second port,

wherein said valve sleeve defines:

a plurality of passages communicating with the first chamber and the second chamber; and

an annular groove communicating with an opening in each of said plurality of passages; and

a spool in the first chamber and axially moveable with respect to the valve sleeve;

a spring biasing the spool towards said second chamber;

a one-way valve allowing flow from the first port to the second port and inhibiting flow from the second port to the first port; and

a valve having an outer circumference contacting said valve sleeve adjacent to said annular groove.

Claim 18. (Previously presented) The valve of claim 17, wherein said valve defines a gap between said valve sleeve adjacent to said annular groove and an outer circumference of said valve.

Claim 19. (Previously presented) The valve of claim 17, wherein said valve surrounds said spool.

10/662,297
DOCKET NO. K06-156876M/TBS

8

Claim 20. (Previously presented) The valve of claim 17, further comprising a shim between said valve and said valve sleeve.

Claim 21. (New) The valve of claim 11, wherein said valve comprises a step-shaped portion.